

Team Name: PREW

Team Members

Abdulwahab Aljabrine

Elliott Sher

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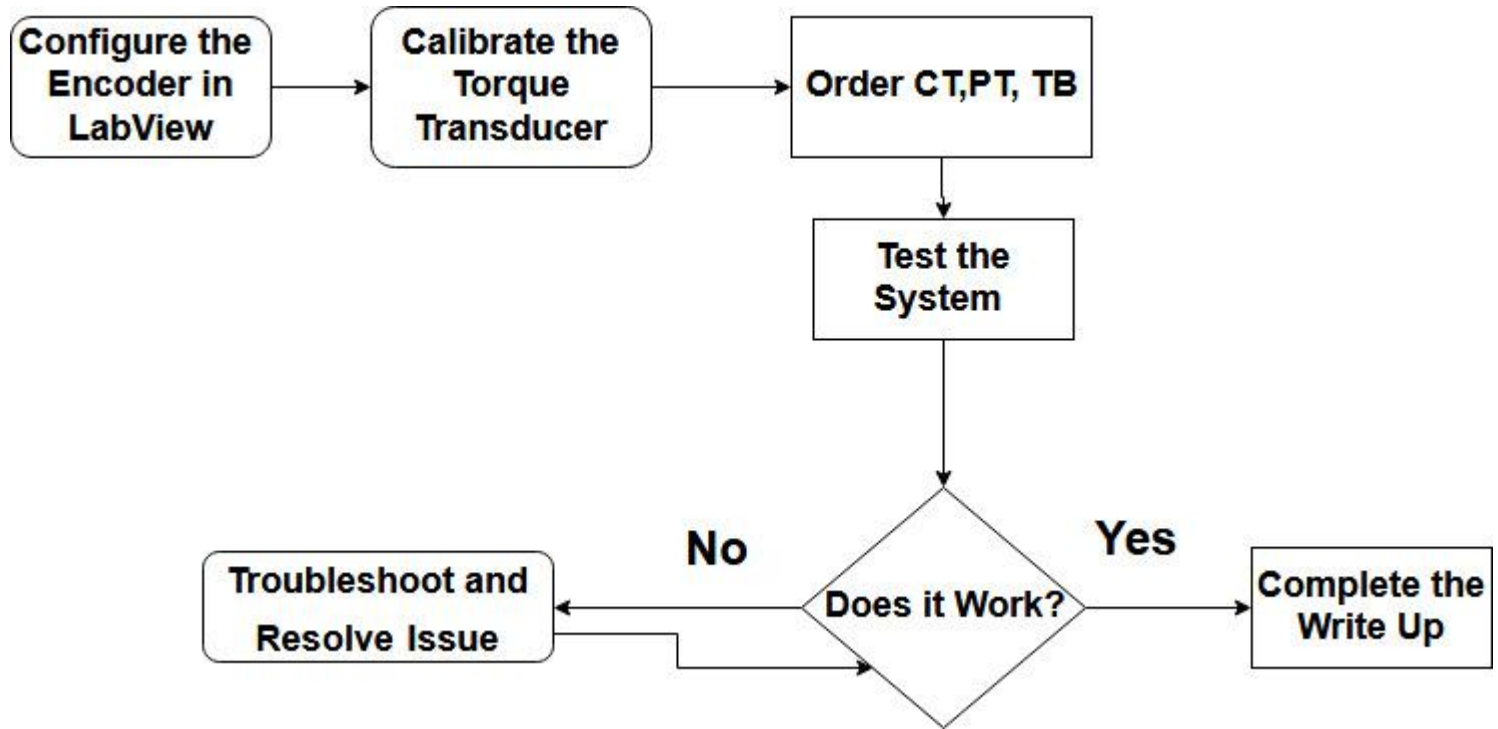
ZhenWei Wu

Data Acquisition System for Synchronous Generator Transient Performance

Sponsored by

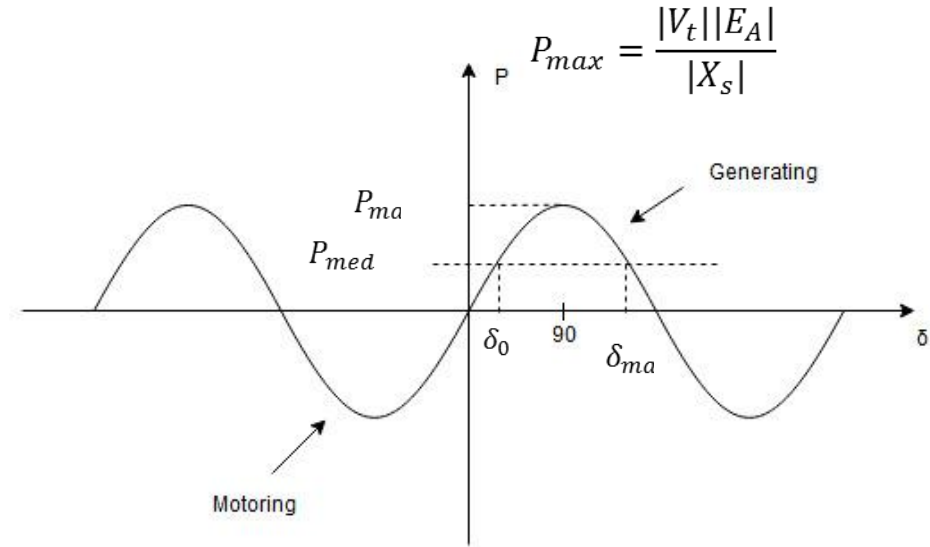


**SCHWEITZER
ENGINEERING
LABORATORIES**



Problem Statement

After a disturbance occurs on the system the angle of the generator will increase and exceed δ_{\max} . Hence, the generator may slip a pole.

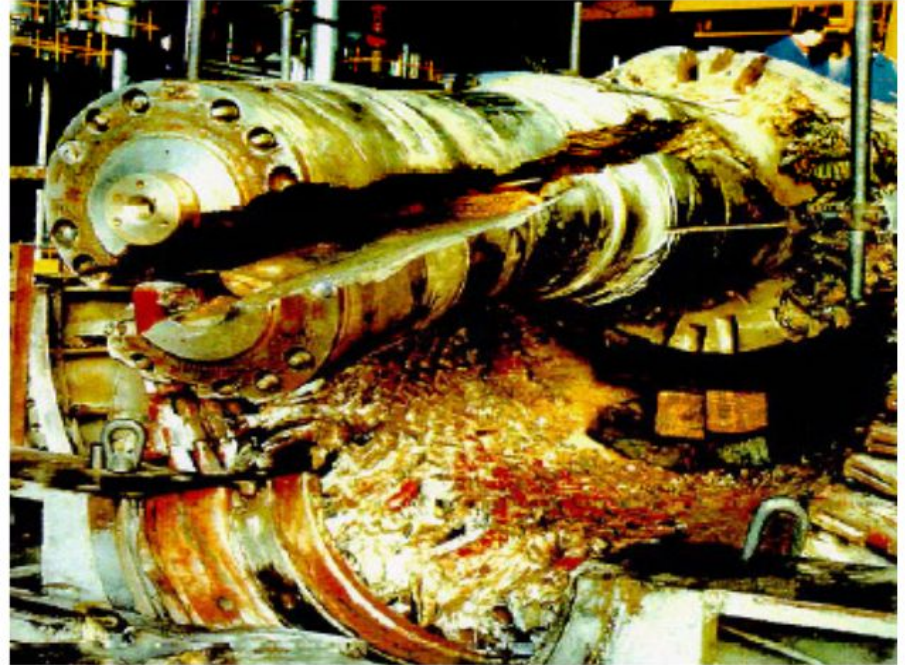


Project Budget

Capstone Project Budget - Fall/Spring												
Project:SEL- Data Acquisition System for Synchronous Generator Transient Performance												
Last Updated		11/29/2018										
Expense Items	2018								Item Total			
	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr				
Equipment/Tools:												
			\$ -							\$ -		
Devices	\$ -	\$ -	\$ -	\$ 600						\$ 600		
			\$ -	\$ 1,900						\$ 1,900		
Extra Hardware	\$ -	\$ -	\$ -	\$ 500						\$ 500		
Poster							\$ 100			\$ 100		
										\$ -		
											\$ 3,100	Expenses Subtotal
									Totals	\$ 3,100	\$ 5,000	\$ 1,900
											Budget	Excess

Causes

- severe electrical and mechanical damage to the generator, drive and shaft.
- severe stress on the network equipment in endangering its stability



Source: North West University (South Africa)

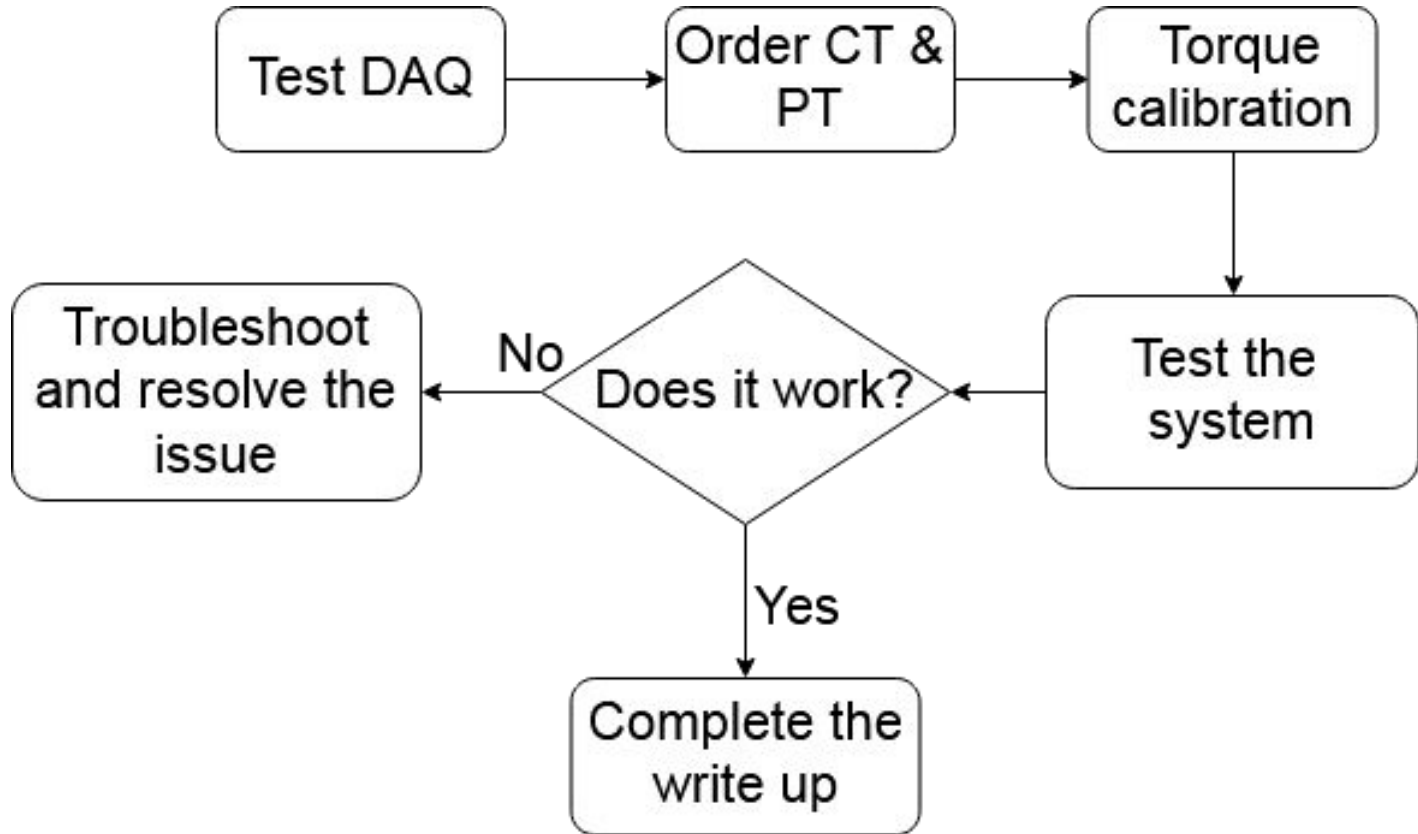
Testing

- LEM Box
- Encoder
- PXI
- Torque Transducer

The goal of the project

Designing and implementing a system to acquire measurements from 20 kVA synchronous generator during transient conditions

Plan for Completion



Measurement Requirement

- Terminal Voltage and Current
- Field Voltage and Current
- Torque and Power
- Speed and Frequency
- Load Phase Angle

Data Acquisition Device Requirement

- Sampling at least 10 kHz
- Measurements must be synchronized
- Monitoring and storing stream measurements

Topology

